REMARKS

Receipt of the Office Action of November 12, 2008 is gratefully acknowledged

The examiner objects to the drawing because ...reference numeral 11 for 'heater 11' ....is not shown (at least not clearly shown in Fig. 1)." On page 4 of the specification it is stated that "...the heater 11 is designed as a solar collector ensuring practically direct heating by solar energy." To illustrate this, Fig. 1 shows heater 11 as a flat plate (for example, a solar panel) which receives solar rays (plural arrows). This is the way solar panels are illustrated. Attached, for example, is an illustration obtained from the internet which shows solar panels mounted on a roof of a building. Shown are a plurality of panels mounted at an angle to receive the sun's rays. That is not unlike what is illustrated in Fig. 1. Granted, the illustration in Fig. 1 is schematic, but 37 CFR 1. 84 allows for such a schematic illustration. Still, if the examiner would like a more detailed illustration, applicant is prepared to provide it, although applicant does not believe it is necessary. For now, however, a further illustration is not seen to be necessary. It is respectfully submitted that applicant is not requesting that the examiner's objection be held in abeyance but rather that the objection is wrong and should be withdrawn, or a specific request made to further illustrate the heater 11.

The objection to the disclosure "because there is no mention of this application being a 371 of PCT/EP03/13824..." is respectfully traversed.

The transmittal sheet of this application specifically identifies this application as one filed under 35 USC 371 and identifies the PCT application. In addition, the ADS filed with this application identifies this application as a U.S. National Stage application of the PCT application. Nothing more is required.

Claims 23 - 44 are rejected under 35 USC 112, second paragraph as indefinite. In reply, claims 23, 30, 31, 33, 34 35, 36, 41 and 42 have been amended to remove the indefiniteness as noted by the examiner.

The rejection of claims 23 - 26 and 28 - 29 under 35 USC 103(a) over Cheng et al in view of Thurman, and the rejection of claims 31 - 33 and 37 - 41 under 35 USC 103(a) over Cheng et al in view of Thurman and Hauser are noted and respectfully traversed.

In claim 23 the sequence of the steps has been defined more precisely in that the two liquids are first exposed to partial vacuum in each of the two devices and said devices are then subsequently flow connected. This is clearly disclosed in original independent claim 30 (last three lines), in the last sentence of the abstract, as well as in the specification on page 6 (last paragraph) to page 8 (first paragraph), where the startup of the operation of an embodiment of the invention is described in detail.

Applied Prior art

A first major difference between this prior art and the invention lies in the way the desired end product of the process is obtained. According to Cheng et al the evaporation produces a vapor of the unwanted ingredients of a crude liquid, namely a vapor of odoriferous substances contained in an edible oil or fat, leaving behind the desired product of the process, namely a deodorized edible oil or fat, in the evaporator. The unwanted odoriferous ingredients are then recovered by condensation as a mere by-product of the deodorization of the desired product in order to avoid discharging them into the atmosphere (see "Discharge to Atmosphere" in Fig. 1) together with the inert gas injected into the crude liquid for removing the unwanted ingredients.

In contrast, according to the present invention the evaporation produces a vapor of the clean liquid, i.e. of the desired product of the process, which is then recovered by condensation, leaving behind the unwanted ingredients of the crude liquid in the evaporator. This difference, which is clearly expressed in both independent claims, has not been addressed in the Office Action, but it is anything but obvious why a person skilled in the art, when starting from the prior art taught by Cheng et al, would change such a fundamental aspect of the process.

As mentioned above, both independent claims now clearly recite the features that crude liquid in the evaporation device as well as clean liquid in the condensation device are each first exposed to a partial vacuum separately and only thereafter the two devices are flow connected. It has been acknowledged in the Office Action (page 5) that the prior art according to Cheng et al does not disclose "filling the evaporation device with crude liquid and the condensation device with clean liquid, when they are disconnected". However, the abovementioned features further call for exposing both liquids in the two devices to a partial vacuum separately from each other and only then establishing a flow connection between the two devices.

The partial vacuum, under which the process taught by Cheng et al proceeds, is created by vacuum boosters 20, 22, a steam-jet ejector 27 and a vacuum pump 32 in the first embodiment shown in Fig. 1 and by vacuum boosters 79, 80, a steam-jet ejector 81 and a vacuum pump 100 in the second embodiment shown in Fig. 2. It is not mentioned anywhere by Cheng et al that the deodorization tower 1 (Fig. 1) or 36 (Fig. 2) and the condensers 24, 29 (Fig. 1) or 77, 78 (Fig. 2) would be separately filled with crude oil/fat and with odoriferous substances, respectively, when the process is started.

Nor is there any hint that the deodorization tower 1 or 36 and the condensers 24, 29 or 77, 78 might be exposed to a partial vacuum separately from each other, before a flow connection between them is established. This would not even be possible, because there is no shutoff valve provided in the conduit leading from the deodorization tower 1 or 36 to the first condenser 24 or 77.

Finally, the claimed invention calls for the partial vacuum in both the evaporator and the condenser to be created by volume enlargement in hermetically closed condition. Cheng et al's vacuum boosters 20, 22 or 79, 80 and steam-jet ejector 27 or 81 clearly do not enlarge the volume of the deodorization tower 1 or 36 and of the condensers 24, 29 or 77, 78, respectively. Again, it is anything but obvious why a person skilled in the art, when starting from the prior art taught by Cheng et al, would rather resort to volume enlargement in hermetically closed conditions than keep the equipment as proposed by Cheng et al.

In this respect the Examiner's opinion that the passage of Cheng et al mentioning "enlarging the sizes of the ejector to accommodate the large volumes of vapors" would suggest the possibility of creating a vacuum by volume enlargement under hermetically sealed conditions has to be contradicted. Rather, the enlargement of the ejector sizes is meant to be an alternative to the use of more than one ejector to ensure a sufficient throughput of vapor volume, the latter alternative being mentioned in the preceding sentence (col. 7, lines 63-66) of Cheng et al.

In summary, the invention differs from the teaching of Cheng et al by not only one but by several features, none of which is obvious for a person skilled in the art.

Thurman teaches a distillation system for obtaining particular ingredients, preferably tocopherols, from a by-product of soya oil deodorization. The system as shown in Fig. 1 of Thurman uses a rotating condenser 21 arranged inside a vacuum tight casing 19 of a still 17 above an evaporating pan 23. Clearly, the condenser 21 and the evaporating pan 19 can neither be evacuated separately, nor can a flow path between them be disconnected and reconnected.

Thurmans's system comprises two other condensers 105 and 129, but similar to Cheng et al's system the vacuum is created by vacuum boosters 33 and 35, which are arranged between the casing 19 of the still 17 and the condenser 105, and by jet ejectors 109, 111 and 145, the first two of them being arranged between the two condensers 105 and 129 and the third of them after the second condenser 105. Neither does Thurman teach the evacuation of any one of the condensers 105 or 129 separately from the casing 19 of the still 17 or the disconnection and reconnection of the casing 19 of the still 17 from/to the condensers 105 and 129, nor would this be possible, because no shutoff valve is provided in the duct 95 linking the casing 19 of the still 17 to the first condenser 105. The same is true for the second embodiment depicted in Fig. 7 of Thurman, which uses three condensers 285, 313 and 319 instead of two.

Further, just like Cheng et al, Thurman teaches creating a vacuum by vacuum

boosters and jet ejectors rather than by volume enlargement under hermetically closed conditions, as taught by the present application. Therefore, this feature of the invention cannot be rendered obvious by a combination of the teachings of Cheng and Thurman.

Finally, the passage of Thurman cited in the Office Action, namely col. 8, lines 29 to 35 reads as follows: " The outflow duct from the still 17, which is connected with the vacuum producing means 31, is also connected by the lines 61 and 61a to the feed tank 13 and the distillate recovery tank 43, as illustrated. Necessary low pressures for the gravity operation of the system are thereby maintained in those tanks."

It is incomprehensible how these statements could inspire a person skilled in the art and starting from the prior art according to Cheng et al to consider "filling the evaporation device and the condensation device with crude or clean liquid, respectively, when they are disconnected", the feature of the invention previously identified in the Office Action to be its only difference from Cheng et al. The cited passage of Thurman refers to two tanks rather than to an evaporation device and a condensation device as does claim 1 of the present application. Further, the cited passage merely teaches exposing the two tanks to the same partial vacuum and does not say anything about filling operations or about a disconnection of vessels.

Therefore, Thurman fails to even disclose the features of the invention missing in Cheng et al, much less being able to inspire their combination with the teaching of Cheng et al.

Hauser discloses an evaporation system for the reclamation of solvents with a primary condenser 6 arranged in a rotation evaporator 2 and a secondary condenser 11 operating under atmospheric pressure. Arranged between the rotation evaporator 2 and the secondary condenser 11 are a ventilation valve 14, a fine regulating valve 8 and the only vacuum pump 10 of the system. This system is very simple compared to those taught by Cheng et al and Thurman and is lacking the kind of similarities to those other systems, which would realistically be necessary to inspire a person skilled in the art to a combination of features.

The fine regulating valve 8 of Hauser is clearly not provided for shutting off the pipe 7 connecting the evaporator 2 with the pump 10 and the secondary condenser 11. To the contrary, according to col. 3, lines 50 to 57 the valve 8 is entirely open during the start phase of the evaporation process and is being closed later only as far as necessary to maintain the appropriate boiling pressure, i.e. it is never meant to be closed entirely.

By calling for the valve 8 to be entirely open initially, Hauser clearly teaches away form the present invention, which calls for the shutoff device between the evaporation device and the condensation device to be entirely closed initially. Moreover, because there is only a single pump 10, the option to evacuate the evaporator 2 and the secondary condenser 11 separately does not exist and, as mentioned before, the main condensation effect is not even provided by the secondary condenser 11, but rather by the primary condenser 6, which is arranged within the evaporator 2 and thereby necessarily exposed to the same partial vacuum as the evaporator 2. It is evident that closing the regulating valve 8 entirely at any point of the operation of the system would not make sense.

In the passage at col. 3, lines 40-49 of Hauser cited in the Office Action it is the function of the ventilation valve 14, which is explained, not the function of the regulating valve 8. However, the function of the ventilating valve, namely to terminate the vacuum and bring the evaporator to ambient pressure, has nothing to do with the present invention. The other passage of Hauser cited, namely col. 4, lines 18-26, refers to the regulating unit comprising all components arranged between the evaporator and the pump, i.e. the valves 14 and 8 and the solvent separator 9, but does not suggest either that the regulating valve could be used to shut off the secondary condenser 11 from the evaporator 2 for the purpose of separate evacuation of these two devices, all the more because there is only one single pump 10 in the system.

Finally, just like Cheng et al and Thurman, Hauser also fails to disclose the feature of the invention calling for the partial vacuum in the evaporation device as well as in the condensation device to be created by volume enlargement under hermetically

closed conditions.

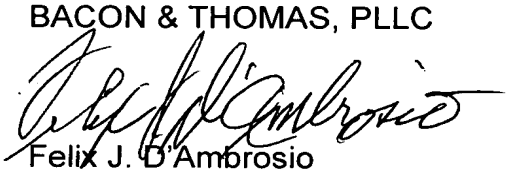
Therefore, the present invention is not obvious for a person skilled in the art even when considering Cheng et al, Thurman and Hauser together.

In view of the foregoing, reconsideration and re-examination are respectfully requested and claims 23 - 44 and new dependent claims 45 and 46 should be allowed. It is further noted that the examiner's indication that claims 27, 30, 34 - 36 and 42 - 44 contain allowable subject matter is appreciated, and can now be allowed in their present state.

Please charge the added claim fee of $52.00 be charged to Dep. Acc. No. 02-0200.

Respectfully submitted,
BACON & THOMAS, PLLC

Date: February 12, 2009



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Potomac Solar, LLC

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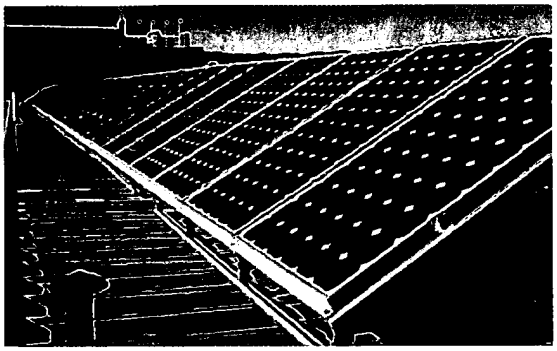

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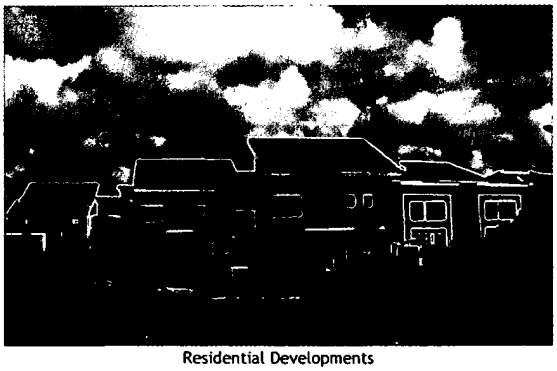

Residential Developments

Turnkey PV System Design and Installations inlcude:

>Evaluation of energy requirements
>Design, engineering and construction of panel and support rack systems
>Obtaining necessary permits and installing panels systems
>Connecting panels to inverter
>Connecting inverter to power grid and/or battery system

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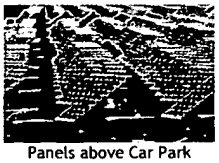
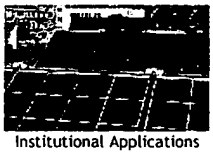


Panels above Car Park

Residential Rooftop Installations



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